AALBORG UNIVERSITET
STUDENTERRAPPORT

MONTEM DESIGN CATALOGUE

14-03-2019

Project introduction

This project involves designing user interfaces and information visualisations for city probe stakeholders and the specifics of the project focus will be refined in communication with Montem.

The goal is showing large quantities of data to the common citizens making it easily understandable or making them realise the concentration of pollution during daily life.

The focus is on spatial visualizations, such as 3D-projections, Augmented Reality (AR), Tangible User Interfaces (TUI), or even art installations that communicate information to citizens.

This idea catalog contains 9 different ideas, created by two different interaction design groups.

Ideas belonging to the two groups are each illustrated on one page with a picture, short description and questions regarding suspicions and thoughts towards the idea.

Table of content

Idea 1
Pinmap

Description

A tangible interactive map of the city with interchangeable pins in different colors each color representing their own statistic. Each pin can be placed on the map, changing intensity in brightness of LEDs on the pin depending on chosen color and the severity of associated statistic.

Questions

- When is the brightness alarming?
- What colors should indicate the diferent statistics?
- Can it show data on a larger scale?
- Does it have to?
- Should it use sound?

Keywords

Art, Interactive tangible artifacts, Exploration.

Idea 2
Vision

Description

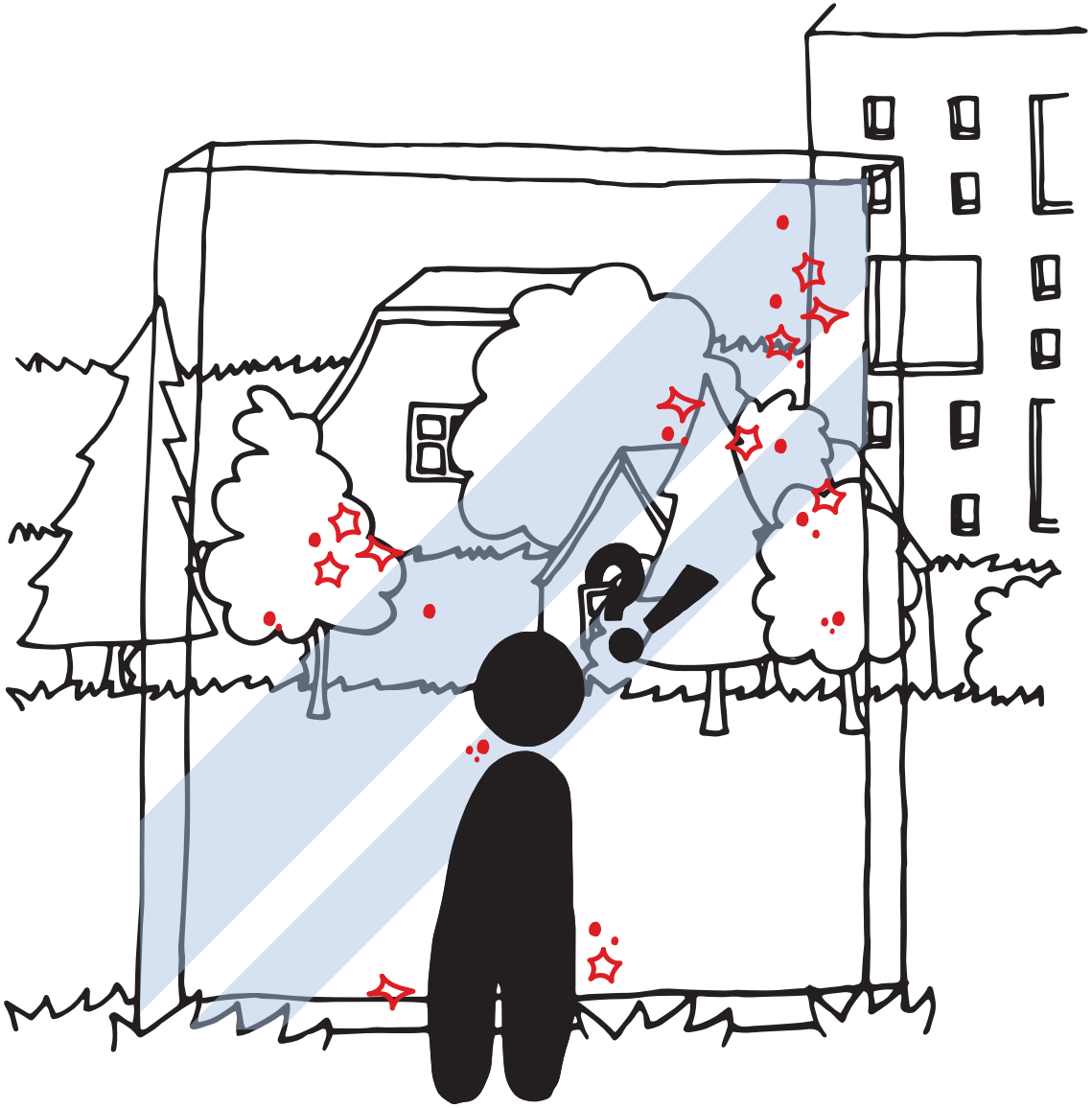
With focus on the outside pollution Vision can replace any window surface with an AR screen, giving the user insight into pollution levels outside through a window. The red elements in the window is a visualization of particles.

Questions

- Would this kind of display prompt any response of users?
- How can we utilise montem data/ experience to educate users?
- Where would people want to use this?
- What interactions can we incorporate? gestures, movement, speech, touch?
- Would stores be interested in this?

Keywords

AR, Focus on particles, Outward focus, Window.



Idea 3
Strings

Description

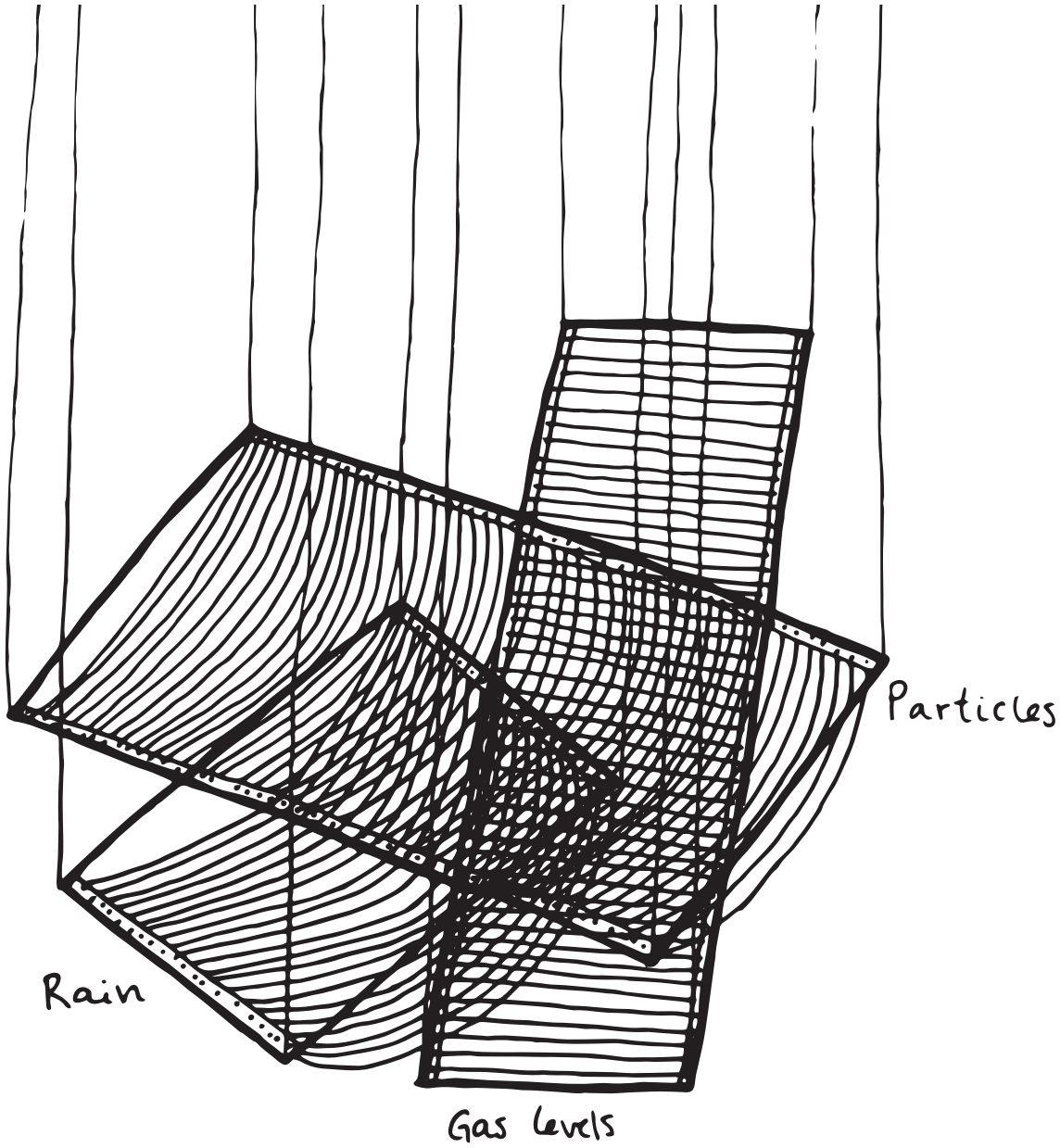
This installation tries to convey the moving forces of pollution by moving and twisting, the installation will tighten and contort its strings to show the uncomfortable contents of pollution in the air.

Questions

- Will the onlookers understand what it is?
- Will the onlookers think about the interplay of pollution and health?
- Where can this art installation be situated?
- Can we obtain the desired effect ? Or will we have to simulate it? Complex structure of strings.
- How will we make use of Montem data?

Keywords

Art installation, Thought provoking, Abstraction, Data in focus.



Idea 4
MirrAR

Description

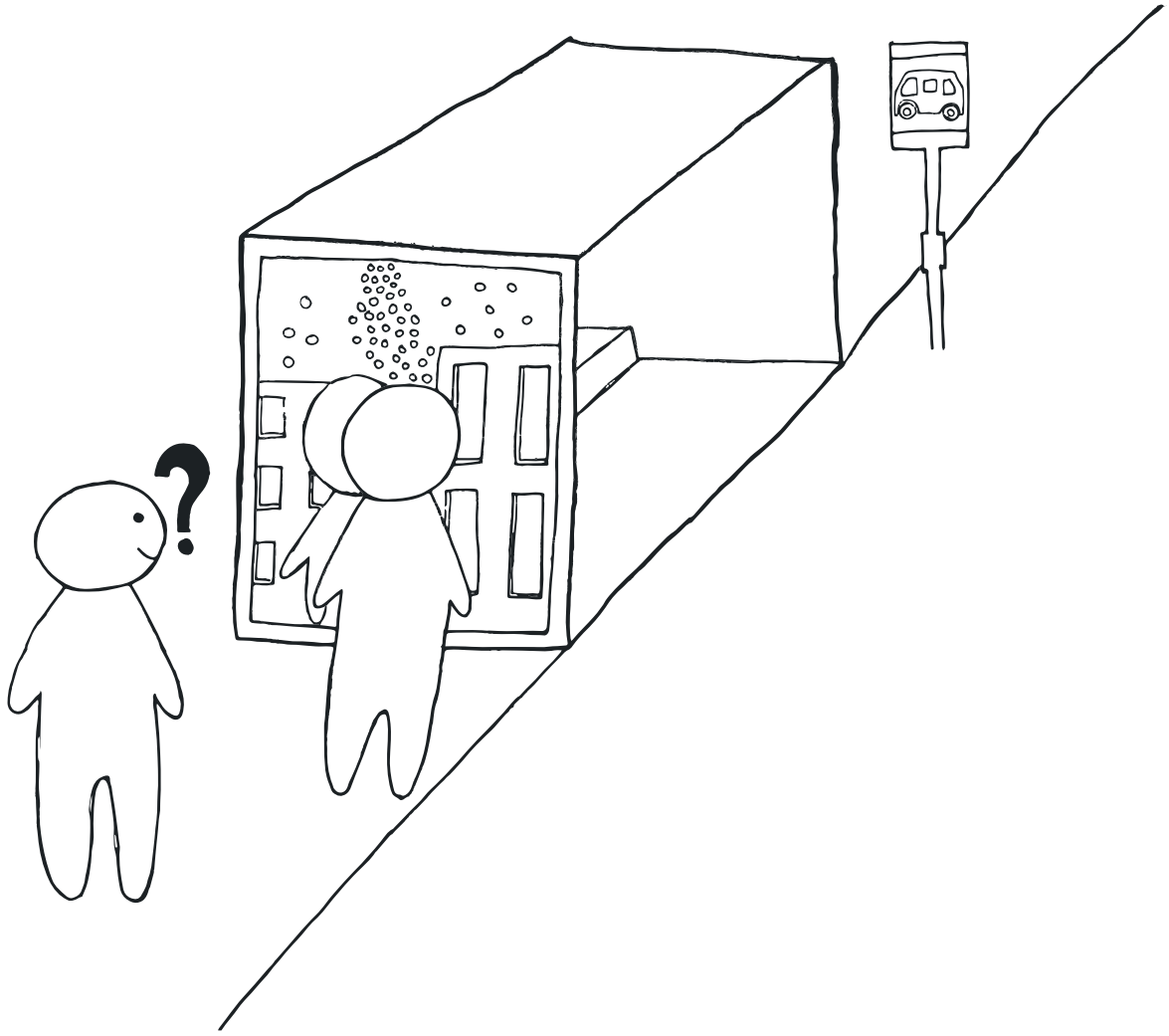
This idea is similar to the previous one, particles are visible through a digital display where users will also be visible and moving around among super sized particles. This will prompt passers by to interact with the particles and think about something they normally can't see. Particle density would be determined from montem datastream.

Questions

- Would this kind of display prompt any response of users?
- How can we utilise montem data/ experience to educate users?
- Where would people want to use this?
- What interactions can we incorporate? gestures, movement, speech, touch?

Keywords

Public display, Provocation, Revelation, Augmented Reality, Pop-up, Live data.



Idea 5
Timeline

Description

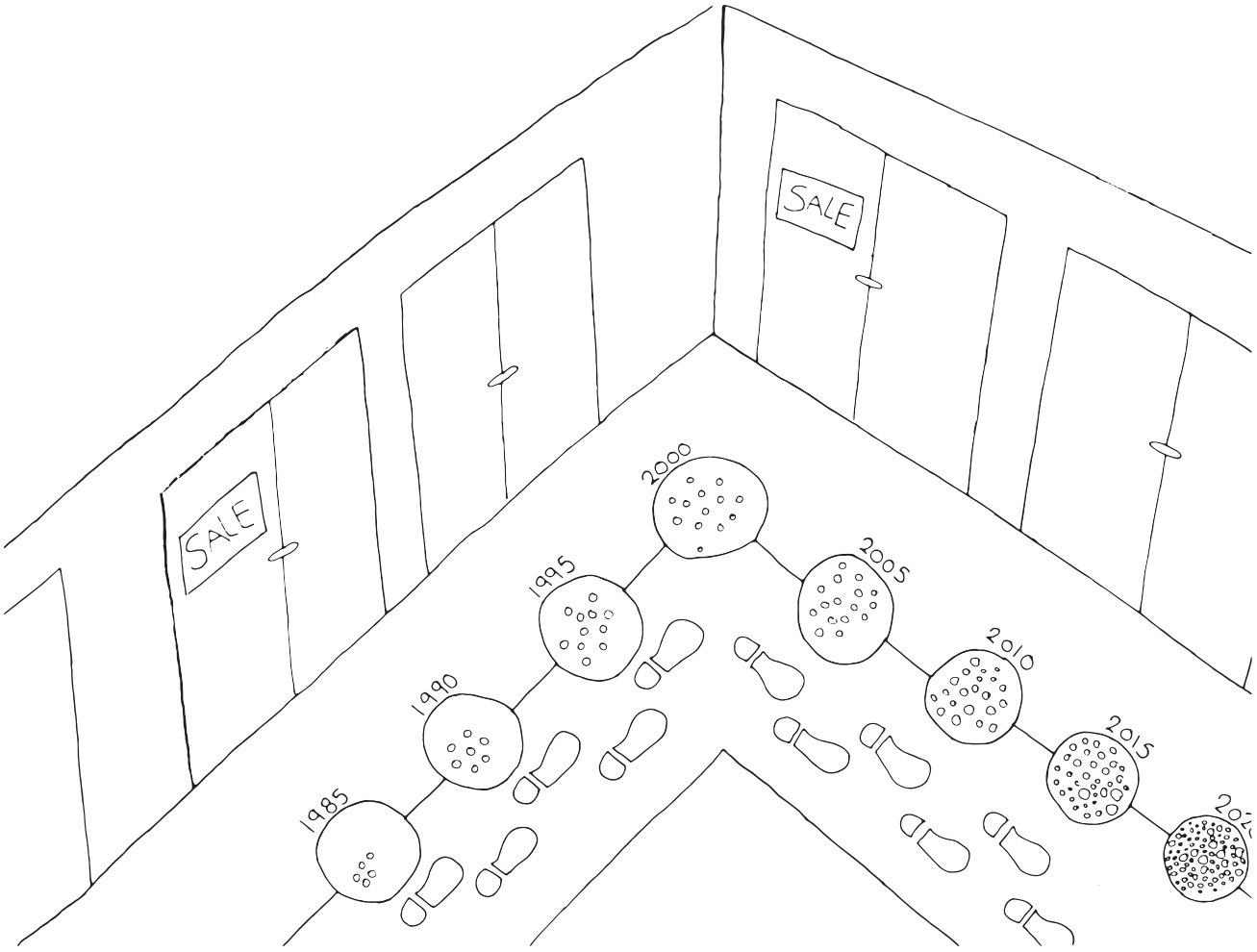
An interactive timeline that shows the development of pollution in the city. The installation is placed in the ground, so individuals can walk and get an overview of how pollution has changed through time.

Questions

- How much space would it be able to take?
- Will it be able to handle outdoor environment?
- Where can it be placed?
- Will it catch the user's attention?
- Can it be placed in the ground or next to the sidewalk?

Keywords

Art, Tangible, Timeline, Walk through.



Idea 6
DynaMap

Description

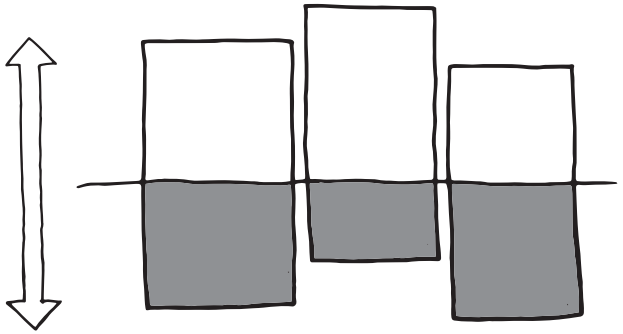
Dynamic shape changing map of the city, using lights to show concentration of pollution in chosen area. It enables the user to move the map with gestures showing the new part of the city being built while the lights are changing.

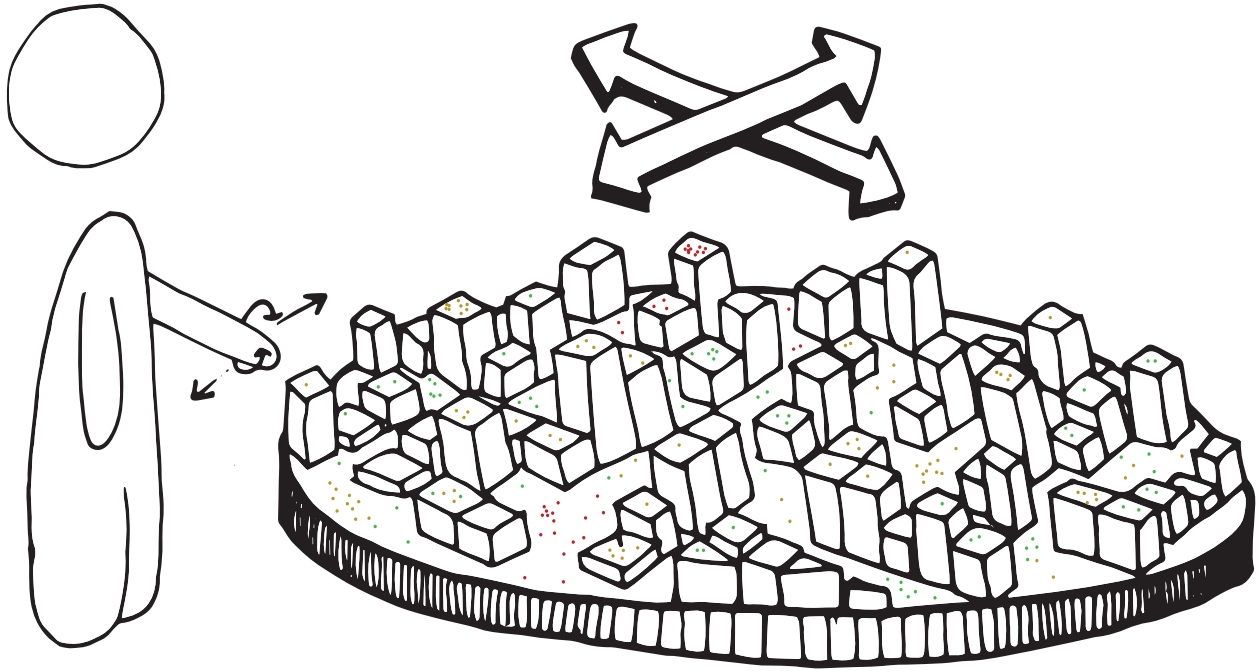
Questions

- Is it too advanced?
- Will the users understand how to interact with the map?
- Will the users recognise which part of the city they are looking at?
- Will it be too focused on the technology and not enough on the data?
- What location would propriate for this idea?

Keywords

Dynamic shape, Focus on part of the city, wow-factor.





Idea 7
VR City Rewind / Environmental Time Machine

Description

This concept is our personal favorite which will be utilizing a VR headset such as “Oculus Rift/HTC Vive”. When putting on the VR headset the user will be placed in a 3D recreation/ simulation of a specific area in their city. The environment of this simulated area will then be controlled by multiple variables which will be controlled by live data streams from various city probes in the real world area.
The user will be able to interact with- and manipulate this functionality through a virtual control panel placed in from of the user. This control panel will be designed kinda like a time machine by providing the user with different adjustable parameters enabling the user to “travel in time” from the present time back as far as the data is accessible.

The VR installation would be positioned inside a public space such as a museum or a library as an opportunity for the general public to understand the environment they are in and how it has changed over the years.

Questions

- Is a problem if we only use/show the data only from a selected area instead of the hole city?
- Could it be a problem that people might have concerns about looking stupid using the VR in public?

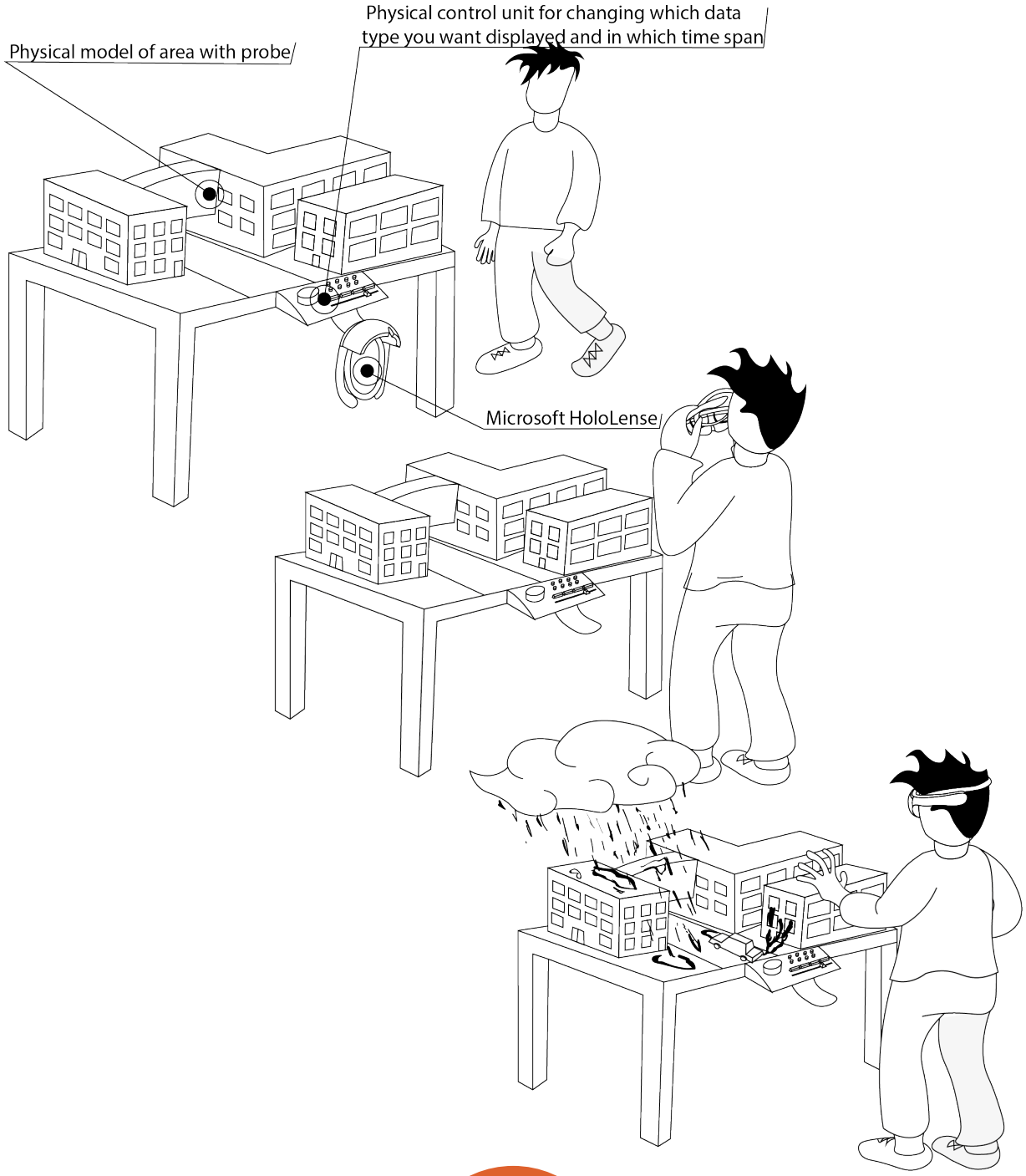
Idea 8
AR Cityscape visualization

Description

This concept will be utilizing Hololens technology to visualize Live Data from City Probes in Aalborg. It features two parts, one physical part and one part in AR. The physical part is a physical representation of a part of Aalborg. This model will be placed on a table at an art installation, at a museum. The AR part will function as an overlay that shows the data on the model as colored dots that will visualize the amount of that data in the area. The color of these will also be more saturated based on the data. You will be able to swap between different data types with buttons, and each of these will show different data types, each one has a different color.

Questions

- Is it okay if the target group for this is very broad since it is intended for a public space in which anyone might use it?
- Would it better if the city was a fully digital 3d model projected on a flat surface or if the digital graphics was projected onto existing physical objects on the surface?
- Could it be a problem that this is such new technology that it might confuse some people who are might not familiar with it?



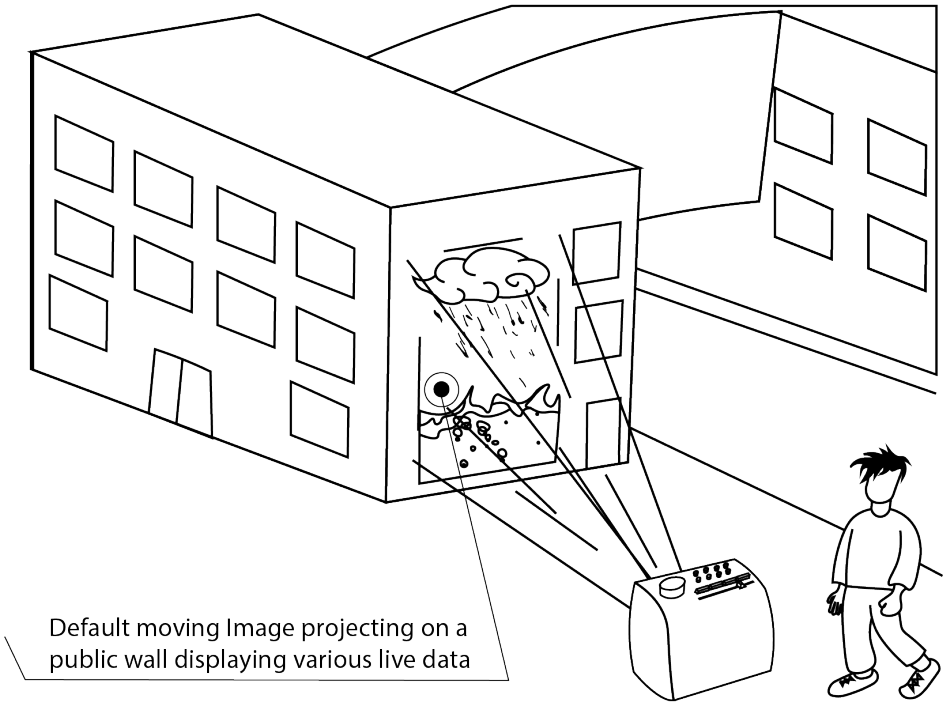
Idea 9
Video Projection

Description

This concept will be utilizing Video Projection to display Live Data. It would be projected on a large public object (ex. the wall of a building) and would use a main controller unit where the user can change the type of data which is being displayed. The display would visualize various types of data. This projector would be located in a public space so that bypassers can see and/or interact with the system. This would inform the public about various relevant data both by just walking by, but also by using the controller.

Questions

- Is it a problem if this will only work when it is not very bright outside and at night?
- Would it be more interesting if users interacted/controlled the installation through more alternative technologies? (ex. voice controlled, body movement, touch screen, ect.)



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Thanks for reviewing the idecata-log, and we look forward to get in touch to dicuss these ideas.